REMARKS

In accordance with the foregoing, claims 19, 23, 25, 31-34 and 36 are amended. Claims 37-39 are added. No new matter is added. Claim 24 is cancelled without prejudice or disclaimer of the subject matter. Claims 1-18 were previously cancelled. Claims 19-39 are pending and under consideration.

CLAIM REJECTIONS UNDER 35 USC § 102

Claims 19-36 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 6,907,015 to Moulsley et al. (hereinafter "Moulsley").

Independent claims 19, 32-34 and 36 are amended herewith to clarify the claimed subject matter. Specifically, features similar to the features originally recited in claims 23 and 24 are added to the independent claims specifying that "a first set of signature character sequences is used for encoding the first decision value in the response signal", "said second decision value in the response signal is encoded using at least one signature character sequence orthogonal to the first set of signature character sequences", and "the at least one signature character sequence used for encoding the second decision value is created by multiplying only each second character of a signature character sequence of the first signature character sequence set by -1." No new matter is added.

Claims 23 and 25 are amended to correspond to amended claim 19. Claim 24 is cancelled because it does not further limit the subject of amended claim 19. Claim 31 is also amended to correctly use the term "occupied transmission channels" which corresponds to the terms used in claim 29 from which claim 31 depends. No new matter is added.

In col. 3, lines 11-20, Mousley states:

> A signature is a signal characterised by its scrambling code and channelisation code modulated by a specific bit sequence. A mutually orthogonal set of signatures can be obtained by defining a set of mutually orthogonal bit sequences for the modulation. One example of such a set is shown in FIG. 3, the set comprising 16 signatures P_0 to P_{15}. Each signature P_i comprises 16 complex symbols S, each of which is either A or -A, where A=1+j. The inverse of each signature is obtained by interchanging A and -A. The signatures and their inverses are all mutually orthogonal. (Emphasis added.)

Further, in col. 3, lines 46-54, Mousley states:

> As well as informing the MS 110 that its preamble 202 has been received, the acknowledgement 206 may be positive, to signal that the requested channels are free, or negative, to signal that they are in use and access is denied to the MS 110. A negative acknowledgement (NACK) may be indicated by the BS 100 inverting the phase of the signature (with respect to some reference or pilot signal). Alternatively, some of the signatures used by the BS 100 for acknowledgement may also be used as a NACK. (Emphasis added.)

From the above-reproduced portions of Moulsley, a person of ordinary skill in the art would infer that, for the first access of a mobile station MS to a base station BS (corresponding to steps 502 to 514 of fig. 5), the base station BS uses a set of signatures for signalling positive acknowledgements to the mobile station MS, while for negative acknowledgements (NACK), a set of inverted signatures is used. Once the mobile station MS has received a positive acknowledgement from the base station BS, a subsequent contention resolution process is initiated (corresponding to steps 516 and 518 of fig. 5). According to this process, the mobile station MS chooses and transmits another signature for the contention resolution preamble to the base station BS. Then, the base station BS uses the set of signatures from which the mobile station MS has chosen to acknowledge the mobile station's contention resolution preamble. At the same time, the base station BS uses the inverted set of signatures for channel allocation, wherein the inverted signatures indicate channelisation codes to be used by the mobile station MS.

In col. 4, lines 40-46, Mousley states:

> In a system in accordance with the present invention, this problem is alleviated by enabling the BS 100 to signal allocation of a packet channel at the same time as it transmits an access acknowledgement 206 or a contention resolution acknowledgement 210. This signalling may form part of the acknowledgement 206,210 or may be transmitted at the same time, preferably with the same channelisation code. (Emphasis added.)

Also, in col. 5, lines 38-52 relating to FIG. 5 (reproduced on next page) Mousley states:

> Next, the MS 110, at step 516, transmits a contention resolution preamble 208 using a randomly selected signature. The BS 100 acknowledges at most one of the contention resolution preambles 208, and at the same time indicates the channelisation code for the PCCH 212 and the scrambling code for the uplink packet channel. With a choice of 16 signatures and their inverses it is possible to acknowledge up to 16 different preamble signatures with one code word, and at the same time to send another code word indicating one of up to 16 different channelisation codes. To avoid the case of needing to transmit a signature and its inverse at

the same time, the signatures may be divided into two sets. The first set and its inverses are used for acknowledgements 210, while the second set and its inverses are used for channel assignments. (Emphasis added.)

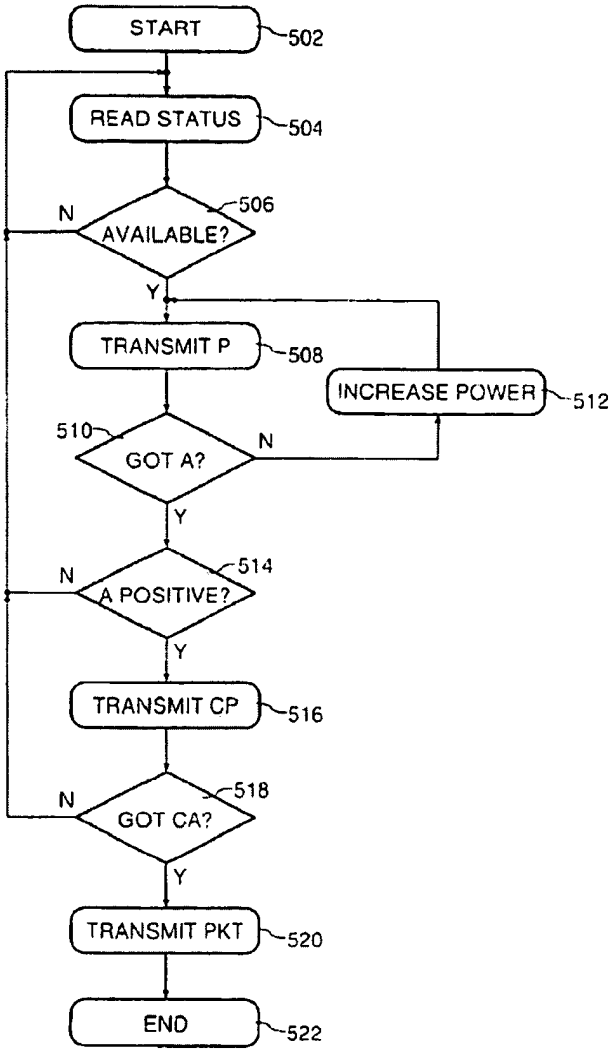

FIG. 5

Thus, in Moulsley, the inverted set of signatures is used differently depending on whether it is used for an initial access or for a subsequent contention resolution. In the initial access process, the inverted signatures are used for negative acknowledgements. In contrast, in the subsequent contention resolution process, no negative acknowledgements are needed anymore as the mobile station MS either receives a contention resolution acknowledgement (CA) and a channel allocation or nothing (which loops the mobile station MS back to step 504 in FIG. 5). This enables the base station BS to use the inverted set of signatures for channel allocation.

However, Mousley does not disclose or render obvious "sending from the base station to the mobile terminal a response signal containing a first decision value, wherein a first set of signature character sequences is used for encoding the first decision value in the response signal, the first decision value indicating whether the mobile terminal is authorized to send a message on the specific transmission channel and, if the first decision value indicates the mobile terminal is refused authorization to use the specific transmission channel and the mobile terminal is authorized to send a message on another transmission channel, the response signal including a second decision value, wherein said second decision value in the response signal is encoded using at least one signature character sequence orthogonal to the first set of signature character sequences, and wherein the at least one signature character sequence used for encoding the second decision value is created by multiplying only each second character of a signature character sequence of the first signature character sequence set by -1" as recited in amended claim 19.

In other words, Mousley fails to teach or suggest the concept of signaling a negative acknowledgement using a first signature and indicating authorization to use another transmission channel (which according to the Examiner corresponds to the channel allocation in Moulsley) using a second signature in a response signal, wherein the second signature is derived from the first signature by inverting only the second character of the first signature). The inverted signatures in Moulsley are either used for negative acknowledgement (in the first access process) or channel allocation (in the contention resolution process), not for both at the same time. In order to signal allocation of a channel simultaneous (i.e., in the same response signal) with a negative acknowledgement, the base station BS in Moulsley would need to use different sets of signatures, which have to be mutually orthogonal so that the mobile station MS may detect them at the same time. Mousley does not anticipate or render obvious the alternative of signalling using two sets of signatures. Specifically, Moulsley does not teach or suggest performing a channel allocation at the same time with signaling a negative acknowledgement.

Furthermore, Moulsley does also not disclose the aforementioned limitation that the second signature character sequences is derived from the first signature character sequence by inverting only each second character of a first signature character sequence. Moulsley discloses in col. 4, l. 18-20, that an inverse of a signature is obtained by interchanging A and -A, which of course results in an inversion of <u>all</u> signature characters, not only a second one as claimed.

In view of the above arguments, amended independent claim 19 patentably distinguishes over the applied prior art, Moulsley. Claims 20-23, and 25-31 depending from claim 19

patentably distinguish over the prior art at least by inheriting patentable features from amended independent claim 19.

In view of the above discussion of the prior art, amended independent claim 32 patentably distinguishes over the prior art at least by reciting "sending from the base station to the mobile terminal a response signal containing a first decision value, wherein a first set of signature character sequences is used for encoding the first decision value in the response signal, the first decision value indicating whether the mobile terminal is authorized to send a message on the specific transmission channel and, if the first decision value indicates the mobile terminal is refused authorization to use the specific transmission channel and the mobile terminal is authorized to send a message on another transmission channel, the response signal including a second decision value, wherein said second decision value in the response signal is encoded using at least one signature character sequence orthogonal to the first set of signature character sequences, and wherein the at least one signature character sequence used for encoding the second decision value is created by multiplying only each second character of a signature character sequence of the first set of signature character sequences by -1."

In view of the above discussion of the prior art, amended independent claim 33 patentably distinguishes over the prior art at least by reciting "detecting at the mobile terminal a first decision value in the response signal, wherein a first set of signature character sequences is used for encoding the first decision value in the response signal, the first decision value indicating whether the mobile terminal is authorized to send a message on the specific transmission channel," and "analyzing at the mobile terminal, upon detection that the first decision value indicates refusal of authorization for the mobile terminal to send the message on the specific transmission channel, the response signal to determine whether a second decision value therein indicates authorization for the mobile terminal to send the message on another transmission channel and which other transmission channels are available, wherein said second decision value in the response signal is encoded using at least one signature character sequence orthogonal to the first set of signature character sequences, and wherein the at least one signature character sequence used for encoding the second decision value is created by multiplying only each second character of a signature character sequence of the first set of signature character sequences by -1."

In view of the above discussion of the prior art, amended independent claim 34 and claim 35 depending from claim 34 patentably distinguish over the prior art at least due to the following features recited in claim 34 "an encoding device generating a response signal to the mobile terminal containing a first decision value, wherein a first set of signature character sequences is

used for encoding the first decision value in the response signal, the first decision value indicating whether the mobile terminal is authorized to send the message on the specific transmission channel and containing a second decision value when the first decision value indicates refusal of authorization for the mobile terminal to send the message on the specific transmission channel and the mobile terminal is authorized to send a message on another transmission channel, wherein said second decision value in the response signal is encoded using at least one signature character sequence orthogonal to the first set of signature character sequences, and wherein the at least one signature character sequence used for encoding the second decision value is created by multiplying only each second character of a signature character sequence of the first set of signature character sequences by -1."

NEW CLAIMS

New claims 37-39 depending from independent claims 19, 32 and 33, respectively, further specify that "the second decision value included in the response signal furthermore indicates which other transmission channels are available for use by the mobile terminal." The new claims are supported by the originally filed application. No new matter is believed to be added. Applicants found no evidence that the newly recited features are disclosed or rendered obvious by the prior art. Thus, the new claims 37-39 patentably distinguish over the prior art by inheriting patentable features from the independent claims and by reciting additional patentably distinguishing feature.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

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